COMET ECM-20PE

In-Target Probe (ITP) Emulator for Intel P6-Class Processors

Welcome to American Arium's state-of-the-art family of COMET in-target probe (ITP) emulators. COMET products offer exceptional visibility to the target operation. Our COMET ECM-20PE ITP provides real-time run control and superb event and trigger manipulation, including accurate breakpoint capabilities on the processor, giving you a robust tool for pinpointing and eliminating low level software hangs. And with a direct link to your network via a TCP/IP connection, data communication moves faster than ever. In addition to including all the features you would expect to find in any professional debugging tool, American Arium's COMET ECM-20PE incorporates additional proprietary technology to further improve debug time, helping you complete your project on schedule and within budget.

The COMET ECM-20PE is a low-cost run control emulator that combines ease-of-use with a sophisticated feature set to debug BIOS, device drivers, OS kernels, and embedded applications. Designed to significantly reduce the time it takes to debug a system, the ITP can help you improve the functionality and performance of your product while minimizing staff and staff hours.

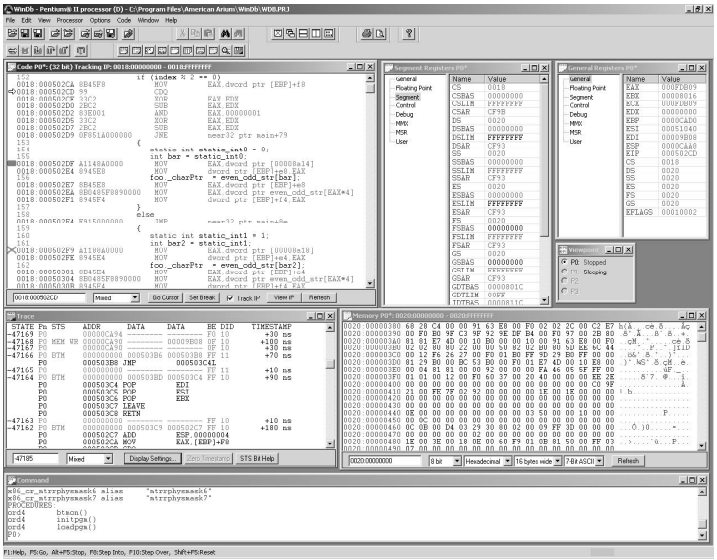
ECM-20

American Arium has forged a synergistic association with Intel Corporation, creating a strong working relationship with the chip maker. With priviledged access to early silicon, our debugging tools support most Intel processors, including Intel P6-class processors. And Intel is not only a supplier but a client; they use our emulators to debug their systems. Such a relationship helps ensure the reliability of all of our products, including the COMET ECM-20PE.

COMET ECM-20PE functions include code disassembly, single-stepping, start/stop, breakpoint setup, view and change memory/registers, download code/symbols, scripting, search/replace, and source-level debug. For systems that do not require trace capabilities and that run Intel P6-class processors, this ITP is the answer.

Included with the ECM-20PE is American Arium's WinDb debugging software. The WinDb debugger interface is an American Arium core technology designed specifically for high-end Intel Architecture (IA) design and debug. The 32-bit application runs on Microsoft® Windows® 95/98/NT/2000.

WinDb is used with all American Arium probes and emulators. Because we designed and developed the software specifically for the equipment, the tight integration of the hardware and software gives you the most robust debug interface on the market today. Easy to install and use, WinDb has IA-32- and IA-64-specific features that cannot be found in any other debugger. You can step through mode changes, set breakpoints in out-of-context address space, and view fly-over addresses as never before.



WinDb Interface

ECM-20PE Features

- Works in real time
  - All processor frequencies
- TCP/IP connection means data communication speed over serial connection improves by factor of 10
- Breakpoints
  - 4 debug register
  - 64 software
  - SMM entry/exit
  - Reset
  - BNC external trigger in/out
- In-line assembly
- Source code/symbolic debug
  - Boot-loadable OMF-386, DWARF2, Intel Textsym
- Multi-processing (SMP) support
- Download formats
  - BIN, OMF-386, ELF32, DOS EXE, Intel Hex
- Address translation
  - Real
  - Virtual-86
  - BigReal
  - Protected
  - System Management Mode
- Registers
  - 386
  - System
  - Control
  - Debug
  - MSRs
  - Floating point
  - MMX™ technology
  - SSE
- Code and data search and replace
- Self-diagnostic test suite
- Robust scripting language

COMET ECM-20PE

Why ECM-20PE

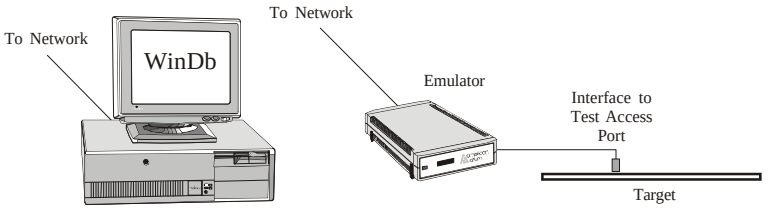
The COMET ECM-20PE offers numerous benefits to the software developer. Perhaps most importantly, this state-of-the-art emulator provides:

1. **Support of Intel P6-class processors.** The COMET ECM-20PE supports all Intel P-6 class processors, including the Pentium® Pro, Pentium II/III, Pentium II/III Xeon™, Mobile Pentium II/III, and Celeron™ processors.

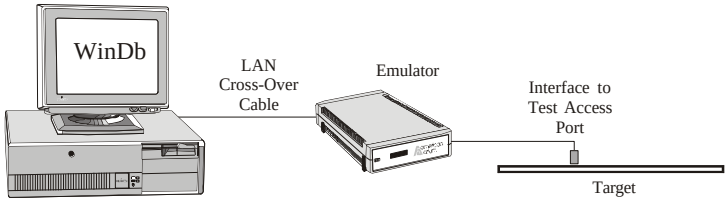
2. **Limited Real Estate Requirements.** The COMET ECM-20PE connection requires relatively little real estate. The emulator connects to a Test Access Port (TAP), more commonly known as a JTAG port, on the target.

3. **Lower Cost Debug Solution.** The COMET ECM-20PE offers exceptional value, providing outstanding performance at a reasonable price.

ECM-20PE BLOCK DIAGRAM WITH TCP/IP CONNECTION



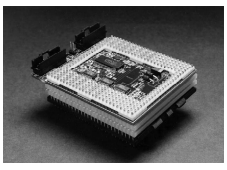
ECM-20PE BLOCK DIAGRAM WITH LAN CONNECTION



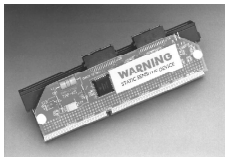
Ordering Information

ECM-20PE	P6-class processor in-target probe. Includes emulator, JTAG interface cable, LAN cable, power supply, WinDb software, manual, and one year STAR-1 service agreement
TAP-P6	Pentium Pro processor TAP adapter
TAP-S1	Slot 1 TAP adapter
TAP-S2	Slot 2 TAP adapter
TAP-SA	Socket-370 PGA/FC-PGA TAP adapter
TAP-B2	BGA and uPGA TAP Adapter
STAR-1	Annual five point service agreement

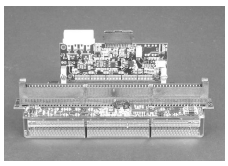
If you do not have a debug port on your target, an adapter is available. Test access port (TAP) products plug directly into the processor's frontside bus, adding debug capabilities to the target.



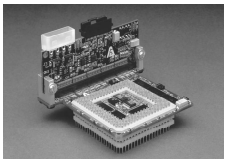
TAP-P6



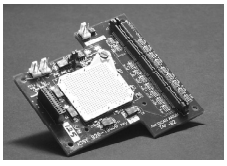
TAP-S1



TAP-S2



TAP-SA



TAP-B2

PC Host Requirements

- PC host (Intel Pentium processor or higher)
- Microsoft Windows 95/98/NT/2000
- SVGA monitor (1024x768 or higher)
- 20 Mbytes hard disk space
- 16 Mbytes RAM
- 10Base-T connection

Specifications

Environmental: 32-90° F (0-31° C), max 85% humidity
Communications: 10Base-T TCP/IP
Dimensions (in/cm) (H) 2.25/5.7 (W) 6.2/15.7 (L) 9.6/24.4
BNC trig in: 50 Ohm, 155 ns max. delay
BNC trig out: 50 Ohm, 125 ns max. delay
Test Access Port: Intel specification
Ship weight (lbs/kg): 7/3.17

The Company

American Arium has been the primary market supplier of Pentium processor ITPs and ICEs since 1992. The company introduced Intel Pentium Pro and Pentium II processor development tools in 1995 and 1996, respectively. In 1998, American Arium introduced tool support for the Pentium II Xeon processor. The company currently supports Intel Pentium, Pentium Pro, Pentium II/III, Pentium 4, Pentium II/III Xeon, Celeron, and Itanium™ processors. The company's mission is to provide timely, superior technical products with an unmatched commitment to service.

Note: Equipment specifications and performance characteristics may change without notice.

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